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CLIMATE CHANGE: A COMPLEX DRIVER OF RURAL MIGRATION

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The link between climate change and rural migration is complex. Several entangled, often self-reinforcing factors are at play. The combination of climatic events and other natural, social, political and economic factors affect populations living in already vulnerable and fragile environments. Understanding how climate change interacts with other migration drivers requires disentangling this complexity in order to design adaptation strategies that address the root causes of vulnerability and tackle the challenges of climate related migration.

CLIMATE CHANGE: A MULTI-FACETED FACTOR

Climate change is a global phenomenon whose widespread impacts are becoming increasingly disruptive to human and natural systems. Climatic events vary in nature, intensity and frequency. Sudden hazards, including floods, can cause immediate - even if often temporary - relocation of people moving out from devastated areas. Extreme slow onset events such as droughts may trigger slower but steadier forms of migration, as shown in the 1970s in the Sahel region. Evidence shows that communities have traditionally coped with, and adapted to, adverse environments. Rural populations have always displayed an extraordinary capacity of innovation, as illustrated by the patient shaping of many agricultural landscapes around the world, such as oasis agricultural systems or terrace cultivation. Migration has long been part of these adaptation processes and is a livelihoods and risk diversification strategy. Pastoralists in arid and semi-arid regions have developed mobility strategies to cope with climate variability and reduce pressure on natural resources.

The magnitude of the effects of climate change is posing now unprecedented challenges and shaping migration patterns. The climate change-migration relationship is far from being based on linear causality. Although environmental changes can influence migration, the decision to migrate is mediated by social, economic and political structures as well as cognitive factors such as place attachment. The outcomes of these interactions are profoundly heterogeneous and can stimulate different responses, including immobility when climate hazards affect access to assets and resources that are fundamental for migration. Migration has been increasingly seen as an adaptive response to the impacts of climate change, operating as a buffer and contributing to the resilience of the communities of origin.

HITTING PARTICULARLY TROPICAL AREAS

Tropical regions, and most notably SSA are particularly vulnerable to climate impacts. This vulnerability results from certain local specificities, such as the extensive reliance on rainfed crop production that represents 96% of agricultural land in SSA, albeit with limited economic and institutional capacity to adapt to climate change.

Temperatures and rainfall changes can have severe impacts on livelihoods, shortening the time for crop maturity, increasing water stress and affecting flowering and seed set. Some quantitative studies indicate that tropical regions will experience wheat and maize crop losses as a consequence of even small changes in temperatures. Crop losses for major cereals are estimated at around 20% by 2050 if no action is taken to mitigate the effect of climate change. Regions that are highly sensitive to temperature changes such as the Sudanian region (Southern Senegal, Southern Mali and Burkina Faso) are expected to experience higher yield reductions than regions which are more sensitive to rainfall changes such as the Sahel (Niger, Central Mali, Northern Senegal and Burkina Faso).

Climate change can foster food insecurity. SSA is one of the regions that would be the most severely hit, with scenarios projecting a 20% increase of malnutrition incidence in 2050. Food crises will likely result from a succession of shocks rather than isolated events and from coupling climatic and non-climatic factors. Forecasting rural migration patterns based on climate projections is indeed inaccurate and overlooks the complexity.

HITTING THE MOST VULNERABLE PEOPLE AND PLACES

The climate change-migration relationship is not only related to the exposure of populations to climatic hazards and shocks but also to their sensitivity and capacity to adapt to such events. Exposure to climatic hazards, dependency on climate sensitive livelihood activities (i.e. rainfed agriculture) and low capacities and opportunities to adapt are some of the compounded elements that shape vulnerability, hence migration drivers and outcomes.

In SSA, rural communities still heavily depend on climate sensitive livelihood activities because of the remaining importance of extractive activities (hunting, fishing, and gathering), and on agriculture for rural incomes (sales of products and self-consumption of food, water, and energy – wood and charcoal). The slow development of irrigation supplies, the low adaptive capacity of existing farming systems, and the limited institutional capacity to design and implement effective adaptation measures exacerbate the overreliance on natural factors. Moreover, the majority of rural people are poor; many are in extreme poverty, and their ability to cope with external shocks is limited by scarce or non-existent possibilities for savings. While kinship and social networks could facilitate adaptation strategies – including migration – other factors such as low levels of education or limited access to assets and resources can act as barriers. Some regions of the continent are already facing critical environmental crises. These are places where land pressure is high (like the Ethiopian Highlands or the Great Lakes region) and where the vulnerability is also exacerbated by water shortages (e.g. Northern Nigeria, specific areas of Central Mali and Burkina Faso).

HITTING FRAGILE INSTITUTIONAL SETTINGS

Climate change affect people differently depending on their existing vulnerability and capacities to respond to its impacts. In countries where risk mitigation mechanisms are in place, people can be better equipped to prepare and cope with the adverse impacts of climate change. The adequate provision of private insurance and public goods (civil protection) and the governments' capacity to answer to basic needs in the aftermath of natural disasters could, for instance, allow people to reconstruct their livelihoods and release pressure on the need to migrate. Similarly, preventive measures aiming at strengthening livelihoods resilience and reducing their sensitivity to climate variability could provide opportunities for people to thrive. Interventions to tackle the root causes of vulnerability spanning from building climate resilient infrastructures to boosting education and access to information could serve the double purpose of decreasing vulnerability as well as enhancing the positive impacts of migration for resilience building. In most SSA countries, issues such as political instability, bad governance, lack of capacities and limited financial resources prevent an effective use and implementation of similar mechanisms. Prevention and adaptation require development strategies based on collective choices, grounded in possible and desirable visions of the future and possible scenarios. It calls for participatory processes for adequate and efficient design of public policies and implementation of multi- stakeholder actions.

Fig.11.3: Aridity zones in 2005

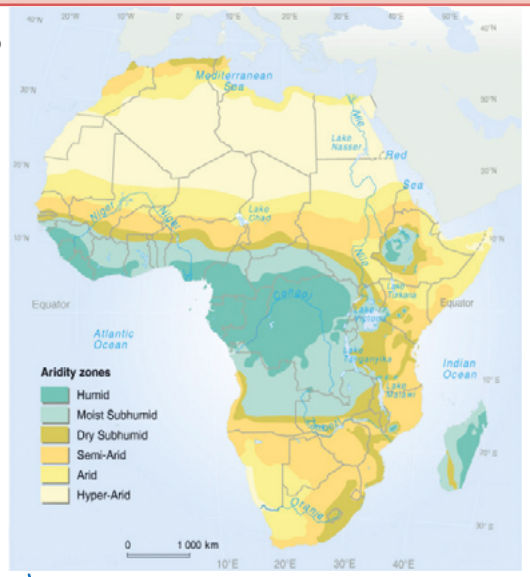


Fig.11.4: Working population engaged in agriculture in 2013

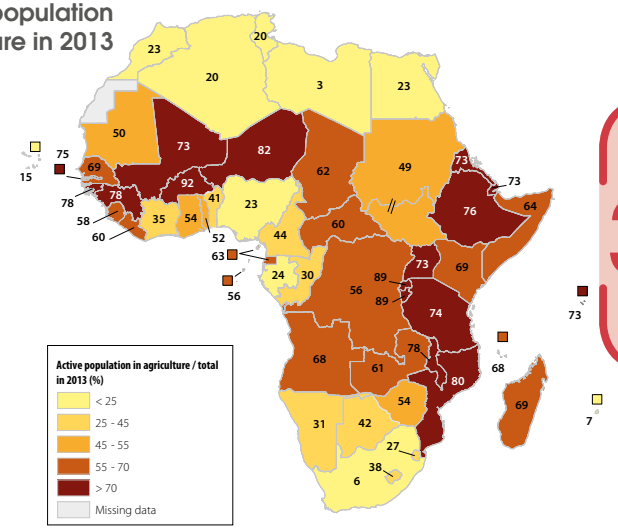


Fig.11.2: Levels of soil degradation in Africa in 2005

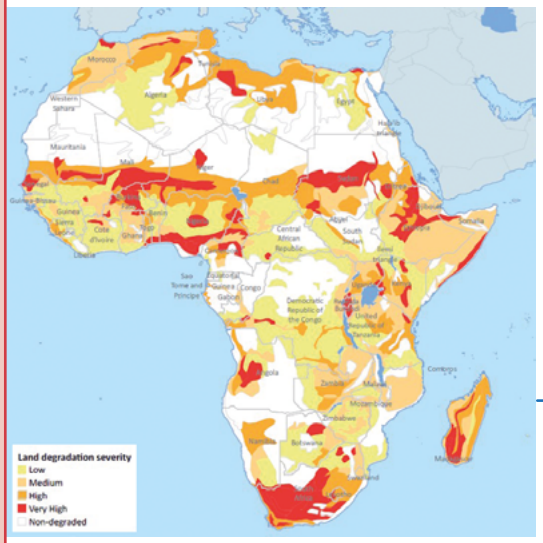


Fig.11.5: Distribution of poverty in 2013

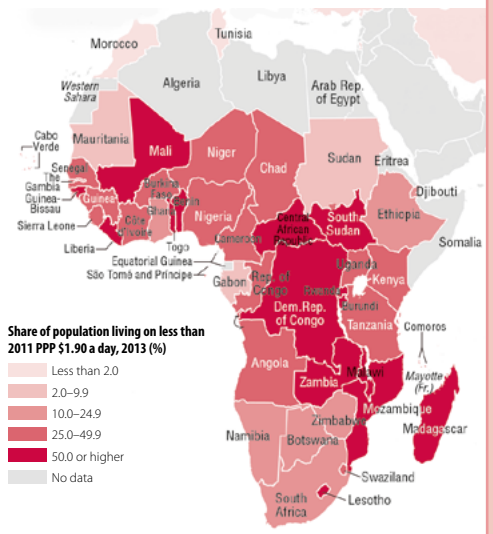


Fig.11.1: Population density in 2010

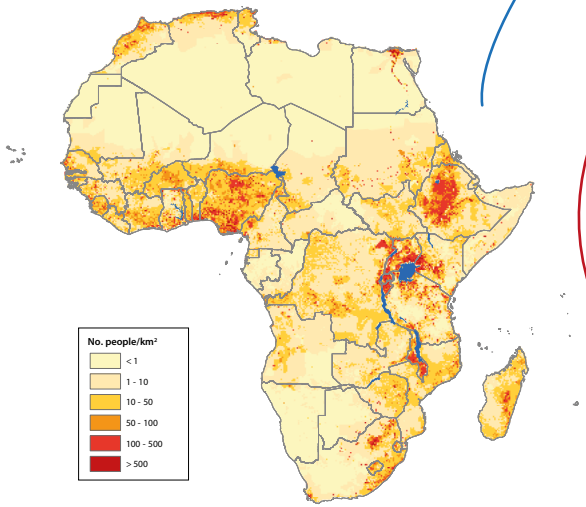
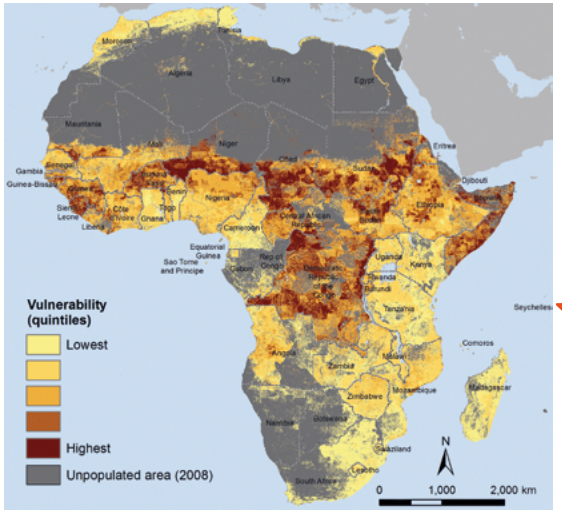


Fig.11.6: Levels of vulnerability (early 21st century)



Agriculture

Water scarcity

Soil degradation

Adverse changes in climatic conditions

Locations most sensitive to climatic hazards

Local population most sensitive to climatic hazards

Poverty

Most vulnerable local population

Population pressure

Ability to migrate

Environmental migrants

Limited ability to migrate

Internally displaced persons / Climate refugees

Inability to migrate

Trapped population